COMPETENCE DEVELOPMENT IN HIGHER EDUCATION

TEACHER'S DIGITAL COMPETENCE IN THE EUROPEAN EDUCATIONAL DISCOURSE

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ABSTRACT

This article highlights the key principles of forming a teacher's digital competence. The purpose of the article is to highlight the peculiarities of forming a teacher's digital competence, taking into account European approaches to this process. During the problem formulation process, a combination of interdisciplinary methods is employed: theoretical methods such as analysis and synthesis to identify the main directions of research into the digital transformation of teacher education; empirical methods, including the study of scientific works and legislative framework related to the digitization of teacher education, and so on. The documents that cover the issues of forming digital competence in students, in particular future teachers, are considered. It has been found that in the European context, teacher training in digital skills should be based on the principles of digital citizenship. This means a critical approach to information that allows educators to navigate the digital world and develop an understanding of the core values of democracy. Studies have shown that the development of teachers' digital skills can be enhanced by gaining the ability to use digital technologies to improve the quality of teaching, educational development, and personal and continuous professional development. It has been established that modern teachers can use digital technologies to effectively manage and organize the educational process, which significantly expands the capabilities of students, taking into account their abilities, needs and interests. Therefore, mastery of digital technologies will ensure an effective, inclusive and innovative learning environment for students.

Keywords: *digital competencies; teachers; education; assessment; recommendations; international initiatives.*

INTRODUCTION

In the XXI century, digitalization is spreading rapidly, changing the world, our lives and professional activities. According to the UNESCO report, "digital literacy and access is a basic human right in the twenty-first century. Digital technologies, tools and platforms should be designed to support human rights, empower people and facilitate collective action for peace, justice and sustainability" (UNESCO, 2021).

Education has also become a part of this digital transformation, and the teacher is an active participant therein. It is worth mentioning, that the COVID-19 pandemic has launched an emergency and rapid transition of global education systems to a digitally-based format (Eri et al., 2021; Bogusz, 2021; Mospan & Sysoieva, 2022; Mospan, 2023a). The logic of scientific research aims to take into account the political and social-cultural background of modern standards and frameworks of competencies, which includes digital competence as a component.

BACKGROUND

Scholars, such as Dutto (2014), Caena (2019), Ghomi (2019), Redecker (2019), Lu (2019), Nyitrai (2021), Mospan (2023b), Reisoğlu (2020), among others, indicate a gradual initiation of addressing this matter. A significant milestone was the creation of the European Digital Competence Framework for Educators (DigCompEdu). However, some aspects of the broader issue remain unresolved. Therefore, it is essential to examine the digital competencies of European educators. One of the key concerns explored in this article is the evolution of teachers' digital competencies within the context of modern European education. Therefore, **the purpose of the scientific article** is to highlight the peculiarities of the formation of a teacher's digital competence, taking into account European approaches to this process.

METHODOLOGY

During the problem formulation process, a combination of interdisciplinary methods is employed: theoretical methods such as analysis and synthesis to identify the main directions of research into the digital transformation of teacher education; empirical methods including the study of scientific works and legislative framework related to the digitization of teacher education, and so on.

RESULTS

In 2006, the European Parliament and the Council of Europe adopted a document that further defined the European social-cultural and educational policy — "Key Competences for Lifelong Learning" (Key Competences for Lifelong Learning). Digital competence is indicated as one of the priorities directions (European Council, 2006).

A Digital Agenda for Europe (2010) is one of the flagship initiatives of the European Strategy 2020, which aims to develop a digital society, economic growth, expand employment opportunities, and increase digital literacy, skills and inclusion for citizens of all ages (European Commission, 2010).

In 2013, the European Commission's Joint Research Center (JRC) presented the Digital Competence Framework for Citizens 2.0 (DigComp 2.0: The Digital Competence Framework for Citizens), which includes 21 competencies in 5 thematic modules (information and digital literacy; communication and collaboration; digital content creation; security; problem-solving) (Vuorikari et al., 2022, p. 6-8).

The new edition of the Digital Competence Framework (DigComp 2.1, 2017) has been expanded by adding a total of 168 descriptors; digital competence is measured based on four generalized levels (basic, intermediate, higher, and expert) (Carretero et al., 2017). The updated version of the Council Recommendations on Key Competences for Lifelong Learning (2018) has expanded the context of the 'competence' concept, which is perceived as a combination of knowledge (concepts and facts), skills and attitudes that are acquired and improved by a person throughout life. By the way, recommendations for students, staff, and educational providers have been formulated therein.

The Council of Europe has identified eight key competencies necessary for personal fulfilment, healthy and sustainable lifestyle, employment, active citizenship and social integration. Digital and technological competencies are perceived in a complex and interconnected way (literacy; multilingualism; mathematical competence and competence in science, technology and engineering); interpersonal skills and the ability to acquire new competencies; personal, social and learning competence, civic; entrepreneurial; cultural awareness and expressive competence (Council of the European Union, 2018, p. 189/7-189/8).

A person with formed digital competence: understands how digital technologies can support communication, creativity and innovation, being aware of their capabilities, limitations, consequences and risks; general principles and logics underlying the development of digital technologies; he or she is aware of the basic functions and conditions of using various devices, software, networks, legal and ethical principles related to digital technologies; he or she critically examines the validity, reliability, and impact of information and data available through digital means (Council of the European Union, 2018, p. 189/9).

In order to fully understand the social context of digitalisation development in the European educational and scientific space, it is worth noting other significant initiatives of the Council of Europe.

In June 2019, the Council of Europe published its conclusions on the prospects for the digitalisation of Europe after 2020: Boosting Digital and Economic Competitiveness across the Union and Digital Cohesion (2019). The document highlights the major priorities and challenges for a strong, competitive, innovative and highly digitized Europe, emphasizing the importance of supporting innovation and encouraging the use of European key digital technologies.

A resolution of the Council of Europe on further developing the European Education Area to support future-oriented education and training systems was adopted in the same year (2019). The Council of Europe's Resolution on digital education in Europe's knowledge societies (2020) highlights the need for a comprehensive, holistic approach to digital education in the aftermath of the COVID-19 pandemic; the importance of introducing digital technologies and student-centred learning has also been emphasised. It is expedient to focus on certain prospects for developing digital education: pedagogical use of digital technologies to support and enhance teaching, learning and assessment; development of digital competencies of students and teaching staff in the context of lifelong learning.

The Digital Education Action Plan, 2021-2027 (2020) is an updated policy initiative of the European Union that sets out a unified vision for quality, inclusive and accessible digital education in Europe, aimed at supporting the adaptation of education and education systems of Member States to the digital age (Digital Education Action Plan (2021-2027), 2020). The plan's objectives include promoting the development of a highly efficient digital education ecosystem; enhancing digital skills and competencies for digital transformation; and strengthening digital citizenship. It should be noted that digital citizenship in the European dimension means a critical approach to information that allows citizens to navigate the digital world and develop an understanding of the basic values of democracy and freedom of speech (European Commission, 2020b).

In 2021, the European Commission presented an overview of the Digital Agenda for Europe 2030 (COM, 2021), and in 2022, the European Declaration on Digital Rights and Principles (2022), which reflect European values and promote a sustainable, human-centred vision of digital transformation: human beings and their rights at the centre of digital transformation; supporting solidarity and inclusion; ensuring freedom of choice of online resources; promoting human participation in digital public space; enhancing the protection, security and empowerment of individuals; and contributing to a sustainable digital future.

The 2030 Digital Compass (2030 Digital Compass) determines specific measures and timelines for implementing the EU's ambitious digitalization goals by 2030 in the following areas: skills, government, infrastructure, and

business. One of the indicators of achieving the goals is the mastery of basic digital skills by at least 80% of the population of the EU countries (COM, 2021).

The Framework for the Development of Digital Competence in Education is a separate subject of our analysis. In 2017, the Digital Competence Framework for Educators (DigCompEdu), developed by the EU's European Research Center on the basis of the DigComp conceptual model and based on a series of research studies at the national, European and international levels, was presented to the European educational community (Ghomi et al., 2019).

DigCompEdu describes in detail 22 competencies organized in six areas (professional engagement, digital resources, teaching and learning, assessment, empowerment of learners, and promotion of digital competence) that teachers should possess in order to promote effective, inclusive and innovative learning strategies using digital technologies and tools.

We provide a description of the competencies within the designated areas, focusing on the knowledge and skills of a teacher who possesses digital competencies.

1. *Professional involvement.* The competencies defined for this sphere are aimed at using the professional environment of teachers for organizational communication with students, parents and other stakeholders, professional cooperation with colleagues to share experiences, and the introduction of innovative pedagogical practices. The teachers' digital competence is expressed in their ability to use digital technologies for improving the level of teaching, development of the HEI, staff and lifelong professional development.

2. *Digital resources.* This sphere specifies the key competencies that teachers should possess to identify, evaluate and select digital resources for teaching and learning; use, co-create digital content and protect personal data; manage and share digital resources for learning needs, ensuring accessibility for students, and parents.

3. *Teaching and learning* — the area aimed at managing and organizing the use of digital technologies. The fundamental competencies defined in this sphere relate to projecting, planning and applying digital technologies at different stages of the educational process. The role of the teacher possessing digital competence is to be a mentor and tutor for students, to support them in the process of collective and autonomous learning, as well to initiate and monitor learning activities.

4. *Assessment* is a field that is designed to use digital tools and strategies. The digital competence defined in this domain provides the teacher with the ability to critically analyse and interpret digital evidence of a student's activities, learning performance, and progress in order to inform students and parents and make decisions about further actions for individualized support using digital technologies.

5. *Empowerment of learners* — this sphere focuses on using the potential of digital technologies for learning and involves the use of digital tools

to empower learners, taking into account their abilities, needs and interests. The competence aims to: develop the teacher's ability to provide differentiation and personalization of learning, accessibility of resources for all students, including those with special needs, active involvement and encouragement of students to use digital technologies in practical activities to develop transversal skills, the ability to think deeply and demonstrate creativity in dealing with complex issues and solving problems.

6. *Promoting the development of students' digital competence.* This area defines competencies for the formation of students' information and media literacy, the ability to engage in digital communication and collaboration, and create digital content in various formats in compliance with copyright. Within the scope of this sphere, the teacher's ability to teach students to use digital technologies safely and responsibly, to manage risks, and to ensure their psychological and social well-being is also defined (Punie & Redecker, 2017, p. 18-25). The core of the DigCompEdu framework is defined by areas 2-5 since these areas together explain the teacher's digital competence; and ensure effective, inclusive and innovative teaching. The area 5 recognises the potential of digital technologies for student-centred teaching and learning strategies. The pedagogical core of DigCompEdu is complemented by areas 1 and 6, focusing on teachers' use of digital technologies in professional interaction with colleagues, students, parents and other stakeholders, as well as for their own individual professional development. The field details the pedagogical competencies necessary for the formation of students' digital competence.

The proposed model is designed to help the teachers understand at what stage or level the development of digital competence takes place. The Common European Framework of Reference for Languages was chosen for ease of assessment (Council of Europe, 2001). The CEFR is a specially developed system that correlates skills with particular criteria for the formation of language and speech competence of users from A1 (elementary user) to C2 (proficient user).

Taking DigCompEdu into account, in 2018, an online tool for teachers' self-assessment of their digital competence (temporarily called DigCompEdu CheckIn) was introduced, based on the following key principles: understanding the key ideas of the framework, transforming competence descriptors into specific actions and practices, providing targeted feedback. This tool is open for testing on the EUSurvey platform (European Commission, 2020a).

SELFIE for teachers is an online self-reflection tool that helps primary and secondary school teachers evaluate their own experience in using digital technologies, tools and resources to learn, communicate, and collaborate with colleagues and support students' digital skills (European Commission, 2023).

UNESCO defines four basic components of inclusive knowledge societies: freedom of expression and freedom of information, universal access

to information and knowledge, quality learning for all, and respect for linguistic and cultural diversity. From this standpoint, ICT is of great importance for achieving all 17 Sustainable Development Goals (European Commission, 2015).

In order to organize teacher training on the use of ICT in professional activities, UNESCO, together with world leaders in the field of information technology, CISCO, Microsoft, Intel, ISTE, has developed a framework model in the form of the Recommendations "ICT Competency Framework for Teachers" (UNESCO, 2008; 2011; 2018).

UNESCO recommendations constitute the basis for the development and implementation of national education policy, taking into account the goals and priorities of the state. Version 3 of the ICT Competency Framework for Teachers (2018) reflects modern technological and pedagogical innovations in the field of ICT in education and is based on the fundamental principles of inclusive education and non-discrimination, free and equal access to information, and gender equality in education with the use of modern technologies (UNESCO, 2018).

The document provides a number of recommendations for adapting the standards in line with national educational policy, developing professional standards for educators and evaluation criteria, and developing training and professional development programs for teachers on modern information and communication technologies. It is recommended to take into account three major concepts: the formation of society's knowledge (exchange of knowledge and information, especially through ICT, possessing a huge potential for transforming the economy and social life), universal design of learning (design of products, environments, programs and services that makes them accessible to the maximum number of people) and inclusive education (non-discrimination, accessibility of information and gender equality in education) (UNESCO, 2018, p. 18).

The UNESCO ICT CFT framework defines 18 ICT competencies that teachers should possess and subdivides them into 64 specific objectives, taking into account six main aspects of professional activity: understanding the role of ICT in educational policy; curriculum and assessment; pedagogical practices; application of digital technology skills; organization and management of the educational process; professional development of teachers) and three levels of ICT use for pedagogical purposes. In the process of a teacher's progression from the level of "Acquiring Knowledge" and "Mastering Knowledge" to the level of "Creating Knowledge", their ICT competencies become more complex (UNESCO, 2018. p. 21-24).

CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH

To summarize, it is advisable to note that the formation of a teacher's digital competence in the European context should be based on the principles of digital citizenship, which means a critical approach to information that enables a teacher

to navigate the digital world and develop an understanding of the basic values of democracy and freedom of speech. Research shows that the formation of a teacher's digital competence will be facilitated by the acquisition of the ability to use digital technologies to improve teaching, develop an educational institution, and engage in personal and continuous professional development. In addition, a modern teacher will be able to effectively manage and organize the educational process using digital technologies, which will significantly expand the capabilities of students, taking into account their abilities, needs, and interests. In addition, teachers' mastery of digital skills will ensure an effective, inclusive, and innovative learning environment for students.

With the prospect of further research, it is advisable to reveal the conceptual foundations for the implementation of the European experience in the process of forming the digital competence of a Ukrainian school teacher.

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ОСОБЛИВОСТІ ЦИФРОВОЇ КОМПЕТЕНТНОСТІ ПЕДАГОГА В ЄВРОПЕЙСЬКОМУ ОСВІТНЬОМУ ДИСКУРСІ

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У цій статті висвітлено ключові засади формування цифрової компетентності педагога. Метою статті є висвітлення особливостей формування цифрової компетентності вчителя з урахуванням європейських підходів до цього процесу. У процесі формулювання проблеми використовується комбінація міждисциплінарних методів: теоретичні методи, такі як аналіз і синтез для визначення основних напрямів дослідження цифрової трансформації педагогічної освіти; емпіричні методи, зокрема дослідження нормативних документів і наукових публікацій, пов'язаних із цифровізацією педагогічної освіти. Розглянуто документи, які висвітлюють питання формування цифрової компетентності у здобувачів освіти, зокрема майбутніх педагогів. З'ясовано, що у європейському контексті навчання педагогів цифровим навичкам має базуватися на принципах цифрового громадянства. Це означає критичний підхід до інформації, який дозволяє педагогам орієнтуватися в цифровому світі та розвивати розуміння основних цінностей демократії. Дослідження показало, що розвиток цифрових навичок вчителів можна покращити, набувши здатності використовувати цифрові технології для покращення якості викладання, освітнього розвитку та особистого і постійного професійного розвитку. Встановлено, що сучасні вчителі можуть використовувати цифрові технології для ефективного управління та організації освітнього процесу, що значно розширює можливості учнів, враховуючи їх здібності, потреби та інтереси. Тому, володіння цифровими технологіями забезпечить ефективне, інклюзивне та інноваційне навчальне середовище для учнів.

__Ключові слова:__ цифрові компетентності; педагог; освіта; оцінювання; рекомендації; міжнародні ініціативи.